

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Claim 26 is amended as below:

A process for continuous deposition of a coating of an HTS tape, comprising:

loading a substrate into a deposition chamber;

translating the substrate through the deposition chamber along a first surface of a substrate block, the substrate block having a gas inlet for feeding gas into a manifold, the manifold distributing gas flow to a plurality of gas channels, including first and second gas channels, extending through the substrate block along a portion thereof and terminating at the first surface as respective openings at positions spaced apart from each other along the first surface, the substrate block further having an internal coolant channel located between the first and second gas channels;

injecting an oxygen containing gas from the inlet, through the manifold, and through the plurality of gas channels of the substrate block and onto the substrate; and

depositing a coating material from a deposition source on the substrate as the substrate translates along the substrate block to thereby form the coating, the coating being a buffer layer over which an HTS layer is formed, the buffer layer having a biaxial texture;

impinging an ion beam from an ion source on the substrate during depositing;

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monitoring a thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing;

~~controlling the ion source and the deposition source~~ during deposition adjusting the power level of at least one of the ion source and the deposition source based on the monitoring of biaxial texture,

wherein injecting the gas directly through the substrate block improves the biaxial texture of the buffer layer as compared to supplying gas indirectly into the deposition chamber.

Claim 48 is amended as below:

A process for continuous deposition of a coating of an HTS tape, comprising:

loading a substrate into a deposition chamber;

translating the substrate through the deposition chamber along a substrate block, the substrate block having a gas inlet for feeding gas into a manifold, the manifold distributing gas flow to a plurality of gas channels, including first and second gas channels, extending through the substrate block along a portion thereof, the gas channels having a length extending from the manifold to the first surface of the substrate block and a substantially straight centerline extending along substantially the entire length, being hollow and open along the entirety of the length, and terminating at the first surface at positions spaced apart from each other along the first surface, the substrate block further having an internal coolant channel located between the first and second gas channels;

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depositing a coating material from a deposition source on the substrate as the substrate translates along the substrate block to thereby form the coating, the coating being a buffer layer over which an HTS layer is formed, the buffer layer having a biaxial texture;

impinging an ion beam from an ion source on the substrate during depositing;

injecting an oxygen containing gas through the gas channels of the substrate block and onto the substrate during depositing to reduce an average texture of the buffer layer;

monitoring the biaxial texture of the coating, a number of ions from the ion beam impinging on the substrate, and a thickness of the coating during depositing; and

~~controlling the ion source the deposition source and an amount of oxygen containing gas based on the monitoring.~~

during deposition, adjusting the power level of at least one of the ion source and the deposition source based on the monitoring of biaxial texture, and regulating a flow of the oxygen containing gas.

Claims 51 and 52 are amended as below:

51. The process of claim [[1]] 26, wherein the first surface of a substrate block has a curved contour with a radius of curvature of between 2 meters and 25 meters.

52. The process of claim [[1]] 26, wherein the texture of the buffer layer is improved by at least 3 degrees

Authorization for this examiner's amendment was given in a telephone interview with David A. Schell on 2/23/2010.

Claims 26, 28-30, 32-36, 39-41, 44-46 and 48-52 are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Ram N Kackar/
Primary Examiner, Art Unit 1792